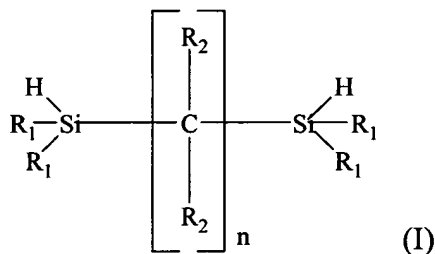


Listing of Claims:

56. (currently amended) A supramolecular structure comprising:
- a multi-generation dendrimer comprising a core, a plurality of interior generations spherically disposed around the core and an outermost generation comprising a plurality of dendritic branches having terminal groups sufficiently reactive to undergo addition or substitution reactions; and
- at least one cross-linkable moiety bonded to the terminal groups of each dendritic branch via a labile bond; wherein the cross-linkable moieties of adjacent dendritic branches are intramolecularly cross-linked to form a dendrimer having an intramolecularly cross-linked peripheral surface, wherein the core dendrimer contains catalytic centers.
57. (previously amended) The supramolecular structure of claim 56, wherein the dendrimer is selected from the group consisting of poly(propylenimine) (DAB) and polyamidoamine (PAMAM) dendrimers.
58. (previously amended) The supramolecular structure of claim 56, wherein the labile bond is selected from the group consisting of silicon-oxygen, silicon-oxygen-carbon, oxygen-nitrogen, nitrogen-silicon, nitrogen-carbonyl-nitrogen, silicon-acetylene, amide, blocked isocyanates and ureas.
59. (previously amended) The supramolecular structure of claim 58, wherein the labile bond is a nitrogen-silicon bond.
60. (previously amended) The supramolecular structure of claim 56, wherein the dendritic branches are intramolecularly crosslinked by one method selected from group consisting of hydrosilation, olefin metathesis, radical polymerization, polycondensation, anionic polymerization, cationic polymerization and coordination polymerization.

61. (previously amended) The supramolecular structure of claim 60, wherein the crosslinking method is hydrosilation.
62. (previously amended) The supramolecular structure of claim 60, wherein the dendritic branches are crosslinked with a crosslinking agent.
63. (previously amended) The supramolecular structure of claim 62, wherein the crosslinking agent is a double crosslinking agent or a multiple crosslinking agent.
64. (previously amended) The supramolecular structure of claim 63, wherein the double crosslinking agent is of the general formula (I):



wherein where R_1 is selected from the group consisting of hydrogen or organic groups having from about 1 to about carbon atoms, R_2 is selected from the group consisting of hydrogen and organic groups having from about 1 to about 30 carbon atoms, and x is an integer from about 1 to about 4.

65. (previously amended) The supramolecular structure of claim 63, wherein the multiple crosslinking agent is selected from the group consisting of $\text{CH}_3\text{Si}(\text{CH}_2\text{CH}_2\text{Si}(\text{CH}_3)_2\text{H})_3$; $\text{CH}_3(\text{CH}_2\text{SiH}_2)_2\text{CH}_3$; $\text{HC}(\text{Si}(\text{R}^1)_2\text{H})_3$; $\text{Si}(\text{R}^1)_2\text{H}_2$; $(\text{SiR}^1\text{HO})_4$; linear polymers selected from the group consisting of $(\text{CH}_3)_3\text{Si-O-(SiR}^2\text{H-O)}_n\text{-Si(CH}_3)_3$, $\text{H(CH}_3)_2\text{Si-O-(SiPHh(-OSi(CH}_3)_2\text{H-O)}_n\text{-Si(CH}_3)_2\text{H)}$, $(\text{CH}_3)_3\text{Si-O-(Si(CH}_3)(\text{H-O)}_m\text{-(Si(CH}_3)(\text{C}_8\text{H}_{17}\text{)-O)}_n\text{-}$

$\text{Si}(\text{CH}_3)_3$, and $\text{H}_2\text{R}^3\text{Si}(\text{SiR}^3\text{H})_n\text{-SiR}^3\text{H}_2$; cyclic compounds; a dendrimer; and mixtures thereof; wherein

R^1 is selected from hydrogen and organic groups having from about 1 to about 15 carbon atoms;

R^2 is selected from methyl and ethyl groups;

R^3 is selected from aryl and alkyl groups having from about 1 to about 15 carbon atoms;

n is a positive integer from about 10 to about 100; and

m is a positive integer from about 10 to about 100.

66. (previously amended) The supramolecular structure of claim 60, wherein olefin metathesis includes the use of a ring opening metathesis polymerization (ROMP) catalyst.
67. (previously amended) The supramolecular structure of claim 60, wherein olefin metathesis includes the use of a cyclic diene metathesis (ADMET) catalyst.
68. (previously amended) The supramolecular structure of claim 60, wherein the coordination polymerization is Ziegler Natta polymerization.
69. (cancelled) The supramolecular structure produced by claim 56, wherein the core dendrimer contains catalytic centers.
70. (previously amended) The supramolecular structure produced by claim 56, wherein the core dendrimer contains metallocores.